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USE OF MOTOR TRUCKS BY COOPERATIVE ASSOCIATIONS AND OTHERS IN MARKETING FRUITS AND VEGETABLES

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By

M. P. Rasmussen

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USE OF MOTOR TRUCKS BY COOPERATIVE ASSOCIATIONS AND OTHERS IN MARKETING FRUITS AND VEGETABLES

By

M. P. Rasmussen
Professor of Marketing
New York State College of Agriculture 1/

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1/ This report is based on a study which was conducted by Dr. Rasmussen for the Cooperative Division of the Farm Credit Administration, in cooperation with the agricultural experiment stations of Connecticut, Delaware, Maryland, Massachusetts, New Jersey, New York, North Carolina, Pennsylvania, and Virginia.

Introduction

Motor trucks have been used to haul an increasingly large proportion of the total supply of fruits and vegetables to market during the last 10 years. As in the case of any change in methods of transportation or distribution of large quantities of produce, this use has given rise to new and perplexing problems. For example, since markets are at times oversupplied, the use of the truck is alleged to have been responsible for much of the irregularity of market receipts; since produce terminals are often congested, the arrival of numerous trucks in the market is alleged to have been chiefly responsible, although this may be due merely to the tendency of public facilities to lag behind the need for them. Arrivals of large quantities of produce by truck are said to have seriously depressed market prices, and produce transported by truck has been assumed to be lower than average in quality. Motor trucks have also been held responsible for much of the increased congestion of public highways.

Since New York City is the largest market in the United States, and also one of the few markets on which relatively complete information is available with regard to total supplies of fruits and vegetables arriving by rail, boat, and motor truck, it was believed that a study of the problems of motor-truck transportation in the marketing of fruits and vegetables, in the area economically tributary to the New York market, would be helpful in solving some of these problems. Such a study, related especially to the business of cooperative marketing associations, was begun in 1934 by the Cooperative Division of the Farm Credit Administration in cooperation with the State agricultural experiment stations of New York, Massachusetts, Connecticut, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina. The present report is a brief preliminary statement of the findings resulting from the study. More detailed information will be published later in bulletin form.

Market Supplies and the Truck

The general impression has been that total market supplies of fruits and vegetables in New York have been greater during recent years; that is, since the use of the motor truck became prevalent. This was apparently an erroneous impression. Only about 10 States are in position to move any considerable volume of produce to New York City by motor truck. Although a much larger proportion of the receipts arrived by truck in 1934, total receipts at the market, by rail, boat, and motor truck from these States were 71,340 carloads in 1929 and 71,209 carloads in 1934; or actually 131 carloads less in 1934 than in 1929.

In connection with the idea that trucking of produce aggravated an oversupplied market, it has been frequently assumed that the truck was responsible for the depression of prices. It is

true that in 1929 the index number of farm prices of fruits was 141 and that of truck crops 149; whereas, in 1934 the index of farm fruit prices was 100 and that of truck crops 104 (table 1). When it is considered, however, that total supplies of fruits and vegetables arriving in New York from all sources in 1929 were the equivalent of 234,000 carloads, and in 1934 only 206,000 carloads - some 28,000 carloads, or about 12 percent less; it can hardly be said that the lower prices of 1934 were the result of increased market supplies.

Table 1.- Total receipts of fruits and vegetables at New York City

Year	Receipts (carloads)	Index numbers of farm prices 1/	
		Fruits	Truck crops
1929	234,480	141	149
1934	206,579	100	104
1935	211,468	91	127

1/ August 1909 to July 1914 = 100. Data from The Agricultural Situation, U. S. Department of Agriculture, V. 20, No. 3, p. 19.

Effect of the Truck on Grades and Prices

There has also been much confusion of opinion and fact concerning the effect of transportation by truck on grading practices and prices. The theory seems to be widely held that the motor truck brings mostly low-grade produce to market, and thus acts to depress prices. The experiences of the growers in the areas surveyed do not bear out this theory. Out of 3,681 growers in the 9 States included in the survey, 56 percent stated that movement by motor truck had had no effect on grades shipped; 15 percent said that grading had been improved; and 17 percent that poorer grades were shipped as the result of trucking. Twelve percent did not know what the effect of trucking had been on grading.

Data from cooperative associations show similar experiences. Out of 56 cooperative associations surveyed, 70 percent of the managers had observed no effect of use of the motor truck on grading. The managers of about 57 percent of the private country shipping agencies replied in a similar manner.

The steady increase in the use of the motor truck by growers is the best indication of the results of their experiences with grades and prices. Forty-one percent of the growers included in the survey had observed no effect on price, and 20 percent reported higher prices resulting from use of the motor truck.

Reports from cooperative associations indicate that about 46 percent of the managers thought use of the motor truck had lowered prices, but 14 percent thought prices had been raised and the remainder had been unable to observe any effect. Out of 137 country shippers, about 43 percent thought prices had been lowered, about 23 percent thought prices had been raised, and the remainder had been unable to detect any effect on prices from use of the motor truck.

Analysis of the records of 16 of the leading commission merchants in New York City failed to reveal data to support the theory that net returns to growers are ordinarily higher for produce shipped to market by rail or boat than for that shipped by motor truck. On the contrary, it was found that net returns to growers were appreciably higher on many crops when transported by motor truck than by any other method. For many crops, from several States, no comparisons were possible because the entire volume was shipped to market by motor truck. Many of the leading commission merchants in New York City did not seem to believe that the method of transportation used exercised any measurable influence on prices realized for fruits and vegetables. Buyers did not inquire as to how the produce arrived, but made purchases on the basis of comparative quality "as is".

Changes in effective consumer demand for grades and qualities unquestionably occurred during the depression. Such changes seem to have been largely in the direction of reduced demand for higher priced grades and increased demand for cheaper grades, regardless of the type of transportation used. The causal factor in the situation has been apparently the marked decrease in consumer purchasing power, resulting from widespread unemployment or other causes of drastically reduced incomes. Use of the motor truck is a result and not a cause of these changes.

Effect of Truck Receipts on Market News

There can be little doubt that use of the motor truck has made much more difficult the problem of estimating the quantity and kinds of produce which will be available for sale in any given market at any time. This makes for draggy markets. Buyers must know approximate supplies in order to arrive at fair purchase prices. This is impossible where motor trucks arrive at all hours, where no adequate central sales facilities are available for truck-borne produce, and where advance information is lacking concerning intended shipments by truck to a given market.

The matter of reporting sales and prices realized for produce hauled to market by motor truck has also presented an unsatisfactory situation, particularly where sales and deliveries are made outside recognized market areas.

Congestion of Highways and Terminals

The motor truck has been widely criticized on the grounds that its use greatly increases congestion in city streets and markets. Congestion in many terminal markets does constitute a grave problem. This congestion, however, is not clearly attributable to the use of motor trucks, railroads, boats, or any other means of transportation. It is primarily the result of failure to recognize modern trends and make adequate provision for them. Data on motor vehicle registrations in the United States for 1934 show that 86 percent of the registered motor vehicles were passenger cars, and only 14 percent motor trucks. 2/

Current Practices of Fruit and Vegetable Growers

Any intelligent consideration of the motor truck problem must be based on knowledge of current practices followed by growers in disposing of their produce, since such practices largely determine what type of transportation is used.

Where Produce Was Sold

Out of about 248,000 tons of fruits and vegetables sold by 2,085 growers in New York, Pennsylvania, New Jersey, Connecticut, and Massachusetts, during the year ending June 30, 1934, about 53,000 tons (or 21 percent) was disposed of directly at the farm. In the more distant States, such as Delaware, Maryland, Virginia, and North Carolina, a somewhat smaller proportion (16 percent) was sold at the farm (table 2). On these sales, growers did not have to furnish transportation, which usually took place in a motor truck owned or hired by the buyer. Growers often prefer to sell at the farm, and seem to be vitally concerned in the continuance of free and unrestricted use of the motor truck by buyers and others.

Almost 85,000 tons, or 34 percent of the total sold in the 5 northern States of the group studied, was delivered by these growers either at country shipping points or local markets, while a still larger proportion (45 percent) was so disposed of in the 4 southern States of the group. Much of this produce would naturally move rather short distances and often represents a situation in which the motor truck has replaced the farm wagon rather than any other means of transportation. The remaining tonnage, or about 45 percent of the total in the 5 northern States and 39 percent in the 4 southern States, was delivered and sold by these growers or their representatives - such as commission merchants or brokers - in city markets.

2/ Automobile Manufacturers Association. Automobile Facts and Figures, Washington, D. C. 1935 Edition, p. 3.

Table 2.- Proportion of total tonnage of fruits and vegetables sold at farm, at country shipping points or nearby local markets, and at city markets, as reported by 3,681 growers in 5 northern and 4 southern States, for the year ending June 30, 1934

Place where produce was sold by grower	Percentage of total tonnage sold at indicated place by -		
	2,085 growers in 5 northern States 1/	1,596 growers in 4 southern States 2/	3,681 growers in 9 States
	Percent	Percent	Percent
At farm	21	16	19
At county shipping point or nearby local market	34	45	39
At city market	45	39	42
Total	100	100	100
Total tonnage sold	248,098	184,261	432,359

1/ New York, Pennsylvania, New Jersey, Connecticut, and Massachusetts.
2/ Delaware, Maryland, Virginia, and North Carolina.

Sales Agencies Used

An analysis of sales of 432,359 tons of fruits and vegetables by 3,681 growers in nine States, shows that 33 percent of this tonnage was sold through city commission merchants or wholesale produce firms; about 23 percent to country dealers; 12 percent to merchant truckers (one of the more recent types of distributive agencies); 7 percent on farmers' public markets; another 7 percent through farmers' cooperative associations; 6 percent to canneries, mills, or factories; 3 percent on farmers' country auction markets; and 2 percent each to chain store buyers, city brokers, retail stores, and direct to consumers (table 3). The interests of these and other types of buyers must be considered in any solution of the trucking problem.

Table 3.- Proportion of tonnage of fruits and vegetables sold to or through various types of buyers, as reported by 3,681 growers in important producing areas in 5 northern and 4 southern States, for the year ending June 30, 1934

Type of buyer or sales agent	Percentage of tonnage sold to or through each type by - 2,085 growers in 5 northern States 1/	1,596 growers in 4 southern States 2/	3,681 growers in 9 States
	Percent	Percent	Percent
City commission merchants or wholesalers	33	34	33
Country dealers	22	23	23
Merchant truckers	14	11	12
Farmers' public markets	11	1	7
Farmers' cooperative associations	2	13	7
Canneries, mills, or factories	6	5	6
Country auction markets	3	2	3
City brokers	-	5	2
Chain store purchasing agents	2	2	2
Consumers	2	1	2
Retail stores	2	1	2
Cold storage operators	2	1	1
Exporters	3/	1	3/
Hucksters	1	3/	3/
Nearby farmers	3/	3/	3/
Roadside stand operators	3/	3/	3/
Public or private institutions	3/	3/	3/
Hotels or restaurants	3/	3/	3/
Total	100	100	100
Total tonnage sold	248,098	184,261	432,359

1/ New York, Pennsylvania, New Jersey, Connecticut, and Massachusetts.
2/ Delaware, Maryland, Virginia, and North Carolina.
3/ Less than 1 percent.

Kinds of Transportation Employed

The actual use made of the motor truck by growers of fruits and vegetables is probably the best indicator of its importance to these growers. Data obtained from 3,681 growers, in 54 important areas in nine States, show that out of 432,359 tons of fruits and vegetables, sold by these growers during the 1933-34 season, all but 11.2 percent left the farm by motor truck (table 4). Only 7.7 percent of the tonnage was shipped from the farm by growers by rail, and nearly 3 percent was hauled to market in the grower's wagon or automobile. More produce was hauled from farms in consumers' automobiles than was moved by boat, but the volume transported by either method was insignificant.

On the average, the growers in these 9 States used their own or hired motor trucks to deliver about 36 percent of their total tonnage of fruits and vegetables to country shipping points or small local markets (table 4). Analysis of such utilization of the motor truck must recognize the fact, however, that much of this hauling is merely replacement of the farm wagon by the motor truck. Also, for an appreciable share of the produce delivered at country shipping points, such delivery represented merely a preliminary step in transportation, since about 76 percent of the produce sold at the farm or at local shipping points was purchased by country dealers, merchant truckers, or other buyers, or delivered to cooperative associations for subsequent movement to market. Such subsequent movement to market may have been by motor truck, rail, or boat.

On the average, slightly more than 35 percent of the produce sold by the 3,681 growers in these 9 States was hauled directly to city markets either in motor trucks owned by the growers or in motor trucks operated by commercial truckers, but hired by the growers (table 4). Almost 18 percent more of the tonnage was hauled to market in motor trucks owned or hired by merchant truckers or other buyers. It is probable that most of this tonnage purchased by these buyers was hauled to city markets, but the actual destination of such produce could not be ascertained. On the average, the proportion of the total tonnage hauled to city markets by motor truck averaged 61.3 percent of the total in the 5 northern States and 41.9 percent of the tonnage in the 4 southern States. On the other hand, over 13 percent of the total tonnage moved to market by rail from the 4 southern States as compared with about 4 percent in the 5 nothern States. It is obvious that rail shipments are at less disadvantage in more distant States than in nearby States.

The question as to why growers have steadily made greater use of the motor truck in the marketing of fruits and vegetables is perhaps best answered by the growers themselves. Out of 3,681 growers in the nine States studied, 43 percent used the motor truck

Table 4.- Proportion of fruit and vegetable tonnage moved from farm by various methods of transportation, as reported by 3,681 growers in important producing areas in 5 northern and 4 southern States, for the year ending June 30, 1934

Method of transportation	Percentage of tonnage shipped by indicated method by -		
	2,085 growers in 5 northern States 1/	1,596 growers in 4 southern States 2/	3,681 growers in 9 States
	Percent	Percent	Percent
Grower's truck to -			
Shipping point or other local market	26.4	19.1	23.3
City market	25.4	16.4	21.5
Total	51.8	35.5	44.8
Truck hired by grower to -			
Shipping point or other local market	6.8	20.1	12.5
City market	15.5	11.3	13.7
Total	22.3	31.4	26.2
Truck owned or hired by buyer	8.0	3.6	6.2
Merchant trucker's truck	12.4	10.6	
Total by motor truck	94.5	81.1	88.8
Consumer's automobile	.8	.2	.5
Grower's wagon	.9	4.1	2.3
Grower's automobile	.2	.7	.4
Rail (freight and express)	3.6	13.3	7.7
Boat	3/	.6	.3
Total by all methods	100.0	100.0	100.0
Total tonnage sold	248,098	184,261	432,359

1/ New York, Pennsylvania, New Jersey, Connecticut, and Massachusetts.
2/ Delaware, Maryland, Virginia, and North Carolina.
3/ Less than 0.1 percent.

because of "more prompt delivery", 31 percent because the motor truck was "more convenient", 24 percent because marketing by truck was "cheaper", 20 percent because "less handling" was involved in shipping by truck, and 10 percent because "produce reaches market in better condition." (Some growers gave more than one reason.) It may be of interest to note that promptness in delivery and convenience were considered relatively more important than the cost of the service itself by these growers.

Data supplied by 3,681 growers in nine States show that, on the average, 78 percent of all use of grower-owned trucks in marketing fruits and vegetables was limited to hauls of not over 20 miles from the farm. Total haulings up to 50 miles accounted for 90 percent of all of the tonnage of fruits and vegetables hauled in trucks owned by farmers (table 5).

Table 5.- Proportions of fruits and vegetable tonnage hauled various distances from the farm by growers using their own trucks, as reported by 3,681 growers in 9 States, for the year ending June 30, 1934

Distance hauled from farm	Percentage hauled indicated distance by -		
	2,085 growers in 5 northern States 1/	1,596 growers in 4 southern States 2/	3,681 growers in 9 States
Miles	Percent	Percent	Percent
Less than 5	37	37	37
5-9.9	17	20	18
10-19.9	21	27	23
20-29.9	9	6	8
30-39.9	4	2	3
40-49.9	3	3/	2
50-59.9	1	3/	1
60-69.9	2	3/	2
70-79.9	2	1	2
80-89.9	2	1	1
90-99.9	3/	3/	3/
100-199.9	2	1	2
200-299.9	3/	1	1
300-399.9	3/	1	3/
400-499.9	-	1	3/
500-599.9	-	1	3/
600-699.9	-	1	3/
700 and over	-	3/	3/
Total	100	100	100
Total tonnage sold	128,404	65,416	193,280

1/ New York, Pennsylvania, New Jersey, Connecticut, and Massachusetts.
2/ Delaware, Maryland, Virginia, and North Carolina.
3/ Less than 1 percent.

On the average, about 50 percent of the shipping which was done in hired trucks was for distances of under 20 miles; 7 percent from 20 to 50 miles; about 24 percent from 50 to 150 miles; another 12 percent 150 to 300 miles; and only about 7 percent was shipped over 300 miles (table 6).

Table 6.- Proportions of fruit and vegetable tonnage hauled various distances from farm in commercial trucks hired by growers, as reported by 3,681 growers in 9 States, for year ending June 30, 1934

Distance hauled from farm	Percentage hauled each distance by -		
	2,085 growers in 5 northern States 1/	1,596 growers in 4 southern States 2/	3,681 growers in 9 States
Miles	Percent	Percent	Percent
Less than 20	35	64	50
20-49.9	11	2	7
50-99.9	22	3	12
100-149.9	22	3	12
150-199.9	6	5	5
200-299.9	3	10	7
300-399.9	1	3	2
400-499.9	3/	3	1
500-599.9	-	2	1
600-699.9	-	5	3
700 and over	-	3/	3/
Total	100	100	100
Total tonnage hauled	55,342	57,799	113,141

1/ New York, Pennsylvania, New Jersey, Connecticut, and Massachusetts.
2/ Delaware, Maryland, Virginia, and North Carolina.
3/ Less than 1 percent.

Use of Motor Trucks by Country Shippers

Out of slightly more than 513,000 tons of fruits and vegetables disposed of by 134 country dealers in 8 States, about 45 percent moved to market by motor truck, and about 55 percent by railroad (table 7). All but 8.3 percent of the tonnage shipped by railroad was hauled more than 250 miles; whereas, almost 85 percent of that shipped by motor truck was moved less than 250 miles.

Table 7.- Relative proportions of tonnage of fruits and vegetables shipped to market by motor truck and by railroad, as reported by 70 country shippers in 4 northern States, and 64 country shippers in 4 southern States, for the year ending June 30, 1934

State and area	Number of country shippers	Total tonnage shipped	Percentage of tonnage shipped by - Motor truck	Railroad
		Tons	Percent	Percent
Northern States: 1/				
New York	43	260,851	50	50
Pennsylvania	3	4,107	63	37
New Jersey	19	61,717	72	28
Massachusetts	5	26,942	68	32
Total	70	353,617	56	44
Southern States:				
Delaware	12	26,967	42	58
Maryland	12	27,966	41	59
Virginia	14	23,983	19	81
North Carolina	26	80,789	11	89
Total	64	159,705	23	77
Total for 8 States	134	513,322	45	55

1/ No country shippers were encountered in Connecticut.

Fifty percent of these country shippers stated they had been using motor trucks in transporting fruits and vegetables to market for 4 years or longer, and 18 percent had been using trucks for 10 years or longer.

While country dealers did not use the identical terms expressed by growers, it is obvious that their reasons for utilizing the motor truck were similar. Out of 134 country dealers, 53 percent used the motor truck because of "speedier service", 39 percent because the truck was "less expensive", 30 percent because produce was in "better condition on arrival", 13 percent because "direct delivery" was made, and 11 percent because of the greater "flexibility" of the motor truck as compared with other means of transportation. (Some dealers gave more than one reason.) Here again, it will be noted that promptness in delivery was considered relatively more important than cost of service.

Use of Motor Trucks by Farmers' Cooperative Associations

Data concerning the modes of transportation used were also obtained from 56 farmers' cooperative shipping associations in nine States. Out of 169,772 tons of fruits and vegetables shipped by

these cooperative associations in the nine States, 24 percent was sent to market via motor truck, and 76 percent by railroad (table 8). There were likewise wide variations in practices between areas and between States within areas. For example, cooperative associations in Delaware and Maryland shipped all but 1 or 2 percent by motor truck, whereas cooperative associations in North Carolina shipped only 20 percent, and in Virginia only 7 percent by motor truck. Cooperative associations in New York and Pennsylvania shipped from 23 to 30 percent by motor truck in contrast with 87 percent in Connecticut, and 97 and 98 percent, respectively, in Massachusetts and New Jersey. These variations are partially explainable by the kind of product marketed and partially by distance product was shipped. In New York State, the heaviest movement through cooperative associations was in celery and lettuce, which still tend to move largely by railroad. In Virginia, a potato-shipping cooperative was by far the largest agency and used the railroad in distributing a large proportion of the crop over long distances.

Table 8.- Relative proportions of tonnage of fruits and vegetables shipped to market by motor truck and by railroad, as reported by 35 farmers' cooperative associations in 5 northern States, and 21 farmers' cooperative associations in 4 southern States, for the year ending June 30, 1934

State and area	Number of farmers' cooperative associations	Total tonnage shipped	Percentage of tonnage shipped by - Motor truck	Railroad
		Tons	Percent	Percent
Northern States:				
New York	23	40,192	30	70
Pennsylvania	1	1,395	23	77
New Jersey	3	9,615	98	2
Connecticut	2	4,520	87	13
Massachusetts	6	3,127	97	3
Total	35	58,849	49	51
Southern States:				
Delaware	1	557	98	2
Maryland	3	1,741	99	1
Virginia	3	96,009	7	93
North Carolina	14	12,616	20	80
Total	21	110,923	11	89
Total for 9 States	56	169,772	24	76

Out of 56 farmers' cooperative shipping associations surveyed, 61 percent used the motor truck because of "speedier service", 41 percent because it was "less expensive" than other means of

transportation, 39 percent because of the "better condition on arrival" of the produce shipped, 21 percent because of greater "flexibility" of the motor truck, 20 percent because it was "convenient for shipper", and 14 percent because the motor truck "can handle small quantities."

In the 5 northern States, shipments by motor truck practically ceased at 400 miles, while in the 4 southern States, shipments beyond 700 miles constituted less than 1 percent of the tonnage.

Operations of Commercial Truckers

A survey of the activities of 277 firms or individuals engaged in hauling fruits and vegetables for hire in the States of New York, Pennsylvania, New Jersey, Connecticut, Massachusetts, Delaware, Maryland, Virginia, and North Carolina, indicates that only a small proportion of such tonnage (a little over 5 percent) was hauled what might reasonably be termed "long distances", that is, over 300 miles (table 9). As a matter of fact, almost 73 percent of the fruit and vegetable tonnage hauled by these 277 commercial truckers was moved less than 125 miles, and an additional 14-1/2 percent was moved from 125 to 225 miles. Seven and one-half percent was hauled from 225 to 300 miles, 4 percent was moved from 300 to 450 miles, and less than 1-1/2 percent was moved over 450 miles. Less than one-fifth (18.3 percent) of the haulings by the 277 commercial truckers was for distances of less than 50 miles.

Commodities Trucked from Farms Surveyed

Analysis of the movement of different kinds or varieties of fruits and vegetables from 3,681 farms in 9 States shows an even more striking dependence by growers on the motor truck. Out of 85 fruits and vegetables shipped from the farm by growers, 27 (or about one-third) moved to market entirely by motor truck, and 90 percent or more of the tonnage of an additional 34 crops likewise was transported to market by motor truck. On the other hand, these growers shipped 55 percent of the lettuce tonnage, 28 percent of the collards, almost one-fourth of the peaches, green peas, and beets, and, roughly, one-sixth of the radishes, quinces, spinach, watercress, cucumbers, kale, squash, and turnip tops by rail. Out of the 85 fruits and vegetables shipped, 37 were shipped to some extent by rail. All but one were shipped, to some extent, by motor truck.

Growers' Experiences with Truck Service

Tardiness.- Some members of the produce trade objected to use of the motor truck on the ground that it was often late in arriving at the market, because of bad weather, accidents, or other reasons. Out of 123,416 trips to market, these 3,681 growers reported 613 instances of late arrival at market. Lateness to market thus occurred in about one-half of one percent of all trips. This does

not seem an unreasonable record. About 40 percent of the delays were due to breakdowns en route, 29 percent to bad weather, 8 percent to accidents, 6 percent to traffic congestion, 5 percent to late starts, and 3 percent to tire trouble. Data were not obtained concerning late arrivals on rail shipments.

Table 9.- Tonnage of fruits and vegetables hauled varying distances by 277 commercial truckers, in 9 States 1/, for the year ending June 30, 1934

Distance hauled	Tonnage hauled	Percentage of total tonnage hauled
Miles	Tons	Percent
Less than 25	27,508	10.4
25-49.9	20,984	7.9
50-74.9	23,350	8.9
75-99.9	71,556	27.1
100-124.9	48,501	18.4
125-149.9	13,292	5.0
150-174.9	8,432	3.2
175-199.9	4,435	1.7
200-224.9	12,143	4.6
225-249.9	14,397	5.5
250-274.9	3,241	1.2
275-299.9	2,146	0.8
300-449.9	10,453	4.0
450-599.9	2,510	1.0
600-749.9	871	0.3
750 and over	119	2/
Total	263,938	100.0

1/ New York, Pennsylvania, New Jersey, Connecticut, Massachusetts, Delaware, Maryland, Virginia, and North Carolina.
2/ Less than 0.1 percent

Accidents.- Out of 3,681 growers, only 71 (about 2 percent) reported that accidents of any kind occurred to trucks hauling their produce to market. The damages incurred by the motor trucks in these accidents amounted to about 0.04 percent of the gross sales value of the produce hauled, or about 1.4 cents per ton of produce hauled. Damage to other parties in these same accidents amounted to 0.03 percent of gross sales, or about 1 cent per ton of produce hauled.

There were 151 instances reported of loss in transit on motor truck haulings, and 49 instances of such loss on rail haulings. Growers did not know the reasons for the losses in 29 percent of the truck cases. Of losses by truck, 30 percent were due to produce lost or stolen; 17 percent to accident; 14 percent to delayed arrival; and 9 percent to spoilage in transit. Rough handling accounted for only 1 percent. Data were lacking concerning the causes of 49 percent of the losses incurred on rail shipments. Nineteen percent was due to spoilage in transit; 12 percent to late arrival at destinations; 8 percent each to lost or stolen produce and to rough handling; and about 4 percent to accidents.

As reported by these 3,681 growers, losses of produce in transit, when hauled by motor truck, amounted to $5,576, of which $2,208 (or 40 percent) was collected from truck operators. The net loss amounted to 1 cent per ton, for all tons hauled by motor truck. These growers also reported losses of produce in transit by railroad of $6,372, of which $432 (or 7 percent) had been collected when this survey was made. The net loss amounted to 19 cents per ton for all tonnage shipped to market by rail by the growers in these 9 States.

Some Factors Affecting Net Returns to Growers

Place of Sale

Net returns to growers were frequently higher per unit of sale, when sales were made at the farm than when sales were at country shipping point or city market. This may be because buyers at the farm often had somewhat better opportunity for selection, and it is quite probable that the quality of such selections was somewhat higher than that of produce sold at country points or city markets. In many instances, however, only relatively small quantities of any fruit or vegetable could be sold at the farm. These growers probably sold all they could at the farm, but once the "at farm" demand was filled, they perforce had to turn elsewhere for a market, and frequently had to sell at lower prices in order to move the produce at all. It has been argued during recent years that all marketing difficulties would be solved if consignment of produce were forbidden and only that produce were permitted to move to market which had been sold at the farm or country shipping points. Aside from the difficulties which would be encountered in attempting to put into effect such a plan, and the fact that there is little evidence to indicate that the commission method of selling is either more or less efficient than any other method, it is probable that under such a plan a considerable volume of produce might go unsold or be dumped on local markets.

Type of Buyer

The type of sales agency which handled the largest volume of a given commodity rarely headed the list, insofar as net returns to growers were concerned. As a matter of fact, all of the various types of buyers or sales agencies are unable to operate on a

strictly competitive basis by the very nature of their legal and practical set-up. Merchant truckers, country dealers, chain-store buyers, wholesalers, retailers, exporters, cold storage operators, and others are not compelled to buy unless they wish to do so, nor are they forced to handle large volumes of unprofitable produce unless they so desire. Cooperative associations, country produce auctions, and commission merchants (city or country) do not operate under such favorable circumstances. If any of these types of sales agencies wish to continue in business, they must of necessity handle any volume of produce which is presented for sale, regardless of market conditions or individual desires. As a consequence, these three types of sales agencies are frequently called upon to handle large volumes of produce when all other buyers or sales agencies refuse to make any purchases. This fact may explain the relatively large volume of fruits and vegetables handled by these three types of sales agencies, on which the net returns were less favorable to growers than sales of smaller volumes to other buyers. It is comparatively easy to merchandise small volumes at favorable prices. The bulk of the crop, however, cannot be sold at top prices.

The foregoing facts may be confusing to the grower who seeks to determine the one type of buyer who consistently paid the highest net returns to growers or operated at lowest marketing costs. The experience of these growers indicates that there was no such type of buyer, but that one type may have paid highest returns for one crop and lowest for another. It seems likely that the type of buyer is not the important consideration. There were evidently efficient and inefficient individuals in all groups of buyers. With such wide variations in the ability of individual buyers or sales agencies, it is unlikely that any analysis of average practices can produce a yardstick by which growers may select the most efficient type of buyer, unless costs of distribution can be used as a relative standard. It does seem of paramount importance, however, that the grower be intimately acquainted with the sales agencies he employs or the buyers to whom he sells, and the facilities they have available for performing the necessary services. Only in this manner can growers be assured that such agencies are well informed and capable of obtaining the highest possible net returns for the various qualities and quantities of produce marketed by each grower.

Method of Transportation

Some growers, shippers and other members of the produce trade seem to believe that net returns to growers are consistently higher for produce shipped to market by rail or boat than for that shipped to market by motor truck. It should be stated, however, that many members of the produce trade do not agree with this theory.

Although thousands of sales through 16 leading commission firms in New York were analyzed, it was found to be exceedingly difficult to find competitive shipments by rail and by motor truck,

which could be used as a basis for comparison. As has been previously stated, if fair comparisons are to be made, records must be found of sufficient sales of the same grade, quality, size, and variety of a fruit or vegetable, packed in the same size and type of container, shipped from the same shipping point by both rail and truck, and sold in the same market at the same time on the same day by the same commission firm. If any of these qualifications are lacking, the comparison is invalid.

Intensive analysis of all sales of the leading fruits and vegetables sold by these 3,681 growers revealed only 32 instances where significant quantities of given fruits or vegetables were moved to market by both rail and motor truck. These instances probably do not fulfill the requirements set forth above, but they do represent all the data available, and they are presented here for what they may be worth.

In the five northern States, only 10 cases could be found where both rail and motor truck had been used to haul relatively large volumes. In all of these instances, except lettuce, the motor truck was used to haul appreciably larger quantities than was the railroad. Out of these 10 instances, growers received highest net returns on shipments by rail in 6 cases, and on shipments by motor truck in 4 cases.

In the four southern States, out of 22 cases where both truck and rail were used, net returns were highest by rail in 8 instances, highest by truck in 11 instances, and practically the same in 3 instances.

From the foregoing it is not evident that the method of transportation has any important or measurable effect on prices. It is probable, however, that users of means of transportation choose the most favorable means for their purposes, based on the actual costs of distribution involved. Analysis of the 10 cases in the northern States indicates that costs of distribution by rail were considerably higher than those by motor truck in 6 out of 10 instances. In the remaining 4 instances, the variations were very narrow. In the southern area, costs of distribution by rail were appreciably higher than those by truck in 19 out of 22 cases. The major factors responsible for the higher cost of distribution by rail were higher main-haul costs, together with the cost of hauling from farm to shipping point, and also somewhat higher charges for containers shipped by rail.

It has previously been shown that growers considered prompt delivery, convenience and reduced handling as relative more important factors than cost of service. It is probable that other types of transportation will find it necessary to offer these advantages plus lower rates of transportation, if they are to obtain a larger share of the fruit and vegetable traffic now handled by the motor truck.

Problems Resulting From the Use of Motor Trucks

Among the several problems incident to use of the motor truck in marketing, some of the more acute are:

Inadequate Knowledge of Market Supplies

It is admittedly a serious matter that no practical means have been developed for reporting at least approximate total supplies arriving by motor truck at markets in large cities daily before trading starts.

No buyer can purchase intelligently, nor can sellers size up the market with any degree of assurance, unless the daily supply of any given commodity is known with at least an approximate degree of accuracy. The absence of such information makes for fantastic ranges in prices. When practically all produce came to market by rail or boat, it was a comparatively easy matter for both buyers and sellers to obtain accurate information concerning the total supply available for sale on any given day, since a list of the total arrivals was ordinarily posted by the railroad or boat company before trading was begun. With motor trucks arriving at all hours of the day and night, and with no central facilities of any kind available for produce arriving by motor truck, market conditions are little short of chaotic. Such conditions make jobbers and retailers reluctant buyers, since they can never be sure that a later avalanche of supplies by truck will not cause them large losses.

If an economic solution to the motor truck problem is to be achieved, some method must be worked out for reporting intended arrivals of produce by truck before the usual sales period opens up, so that both buyers and sellers may have some means of knowing approximately how much and what kinds of produce will be available for sale on a given market at a given time, whether it arrives by rail, truck or boat.

The solution of this problem may be relatively simple. Out of 3,059 growers who were familiar with the situation, 77 percent reported that they could give notice of intentions to ship to market 12 hours or more in advance of shipment, and an additional 17 percent could advise 3 or more hours in advance, if some means were worked out for gathering such data. If adequate funds are made available to State and Federal departments of agriculture or markets, it is probable that satisfactory and timely supply and price data can be obtained. Unless something is done along this line, however, the selling of truck-borne produce will become more chaotic than ever, and market news reports are likely to diminish greatly in value and usefulness.

Inadequacy and Congestion of Produce Terminals

Unless marked improvements are made in the terminal marketing facilities in many large markets, it will probably not be possible to report market arrivals by motor truck successfully, nor is an economic solution of the motor truck problem likely to be attained without such improvement.

In some manner, adequate and uncongested marketing facilities for receiving, displaying, and selling should be made available for all produce (whether transported by rail, boat or truck), so that the maximum number of buyers may have easy access to the available supplies without the exceedingly costly delays now common in most markets.

In some cities the creation of adequate motor truck terminals may offer a practical solution to the problem. If this method is employed, it will probably be necessary to provide municipal or regional ordinances making the use of the facilities obligatory for all motor-borne produce coming to these markets. In other cities an ideal solution might entail the complete relocation of facilities.

Since motor truck unloads tend to reach a peak at the very time when receipts by railroad and by boat are relatively small, there would seem to be sound economic reasons why rail and truck facilities should be used mutually, if the interests of competitive carriers can be reconciled. There is the further sound economic reason that buyers require both rail-borne and motor-truck-borne produce for their trade, and prefer to obtain such supplies all in one place as quickly as possible.

Salesmanship

One result of greater use of the motor truck has been an increased tendency on the part of the grower to act as his own salesman, particularly on public markets. Where the grower has the qualifications for a good salesman, combined with adequate knowledge of market supplies, and a keen sense for getting the "feel" of the market, this is probably a desirable development. There is, however, considerable evidence to indicate that many growers are poor salesmen and often are in ignorance with regard to market supplies. Many of the more experienced growers have followed the custom of hiring special "market men" who accompany their loads to market and sell them. They have recognized the fact that salesmanship is not a common attribute of growers and that good salesmen are scarce. Many grower-salesmen are frequently said to have poor sales judgment, little or no knowledge of market supplies, and to be weak "holders" of produce. It is alleged that they often destroy the price structure for other growers by dropping prices when there is no economic justification for such a move.

Growers seem to have been giving serious thought to these matters during recent years. The strong tendency towards the establishment of more country auction markets would seem to indicate that growers recognize the need for expert sales service. Only 2,703 of the growers surveyed in these 9 States were familiar enough with terminal market conditions in New York or other cities to feel competent to discuss the matter. Of this number, however, 1,872, or 69 percent, were of the opinion that there was a definite need for the establishment of farmer-owned and farmer-controlled terminal marketing agencies.

It is probable that growers can increase their sales efficiency by any of several possibilities, such as

1. Establishment of cooperative marketing agencies in terminal markets.
2. Hiring the best grower-salesmen to sell produce for certain large groups of growers.
3. Employment of professional sales agencies, such as commission merchants, brokers, and others to perform the sales function.

Control of Movement to Market

Even if all of the foregoing improvements are put into effect, the motor truck problem will still be far from solved. Current methods and time of arrival of produce at many large markets leaves much to be desired. For instance, out of 70 country shippers who used the New York City markets in 1934, 16 percent usually arrived between noon and 6 o'clock; 10 percent between 6 and 8 p.m.; 50 percent between 8 and 11 p.m.; 13 percent between 11 p.m. and 4 a.m.; and the remainder came in at all hours up to noon the next day. Reports from 237 commercial truckers at the same market show 5 percent arriving between noon and 6 p.m.; 14 percent between 6 and 8 p.m.; 64 percent between 8 and 12 p.m.; and 17 percent between midnight and noon the next day.

Out of the 131 commercial truckers who hauled to the Philadelphia market, 7 percent arrived between noon and 6 p.m.; 17 percent between 6 and 8 p.m.; 51 percent between 8 and 12 p.m.; 18 percent between midnight and 3 a.m.; and the remainder up to noon the next day. Arrivals of individual growers' trucks have been equally erratic. It is impossible for any sales agency, cooperative or private, to market produce efficiently under such conditions of delivery, especially as this produce was scattered over a wide area and not in one central market place.

In some manner, more adequate and effective means of (1) insuring timely arrival at markets and (2) of controlling or guiding the movement of produce from farms or shipping points to terminal markets should be developed, whether movement is by truck, rail, or boat.

It is difficult to see how these objectives are to be attained without a far greater degree of cooperation in producing areas than exists at the present time. Cooperation is badly needed among growers in order to obtain greatest economies in transporting maximum loads to market, in dealing with large-scale, well-organized buying agencies, and in packing and grading fruits and vegetables to meet the highly varying needs in city markets.

Cooperation Within the Industry

It has previously been shown that the tonnage shipped to market by the growers in these 9 States through cooperative associations was relatively small. Even if considerable increase should take place in the near future, it is likely that a relatively large share of the tonnage will continue to be sold to or through private dealers or sales agencies. It is obvious, therefore, that control of movement to market from any given area, through cooperative associations alone, is likely to prove entirely inadequate and that a large degree of cooperation may be necessary between cooperative associations, members of the private trade, and others.

If a reasonable measure of control of movement to market is accomplished, it will probably come about through increased cooperative efforts on the part of growers, either through farmers' cooperative associations or some form of grower-shipper cooperation. The need for such cooperative development is gradually becoming more obvious by reason of the rapid evolution of mass-buying organizations on the part of both private and voluntary chain-store companies. The marketing-agreement mechanism, developed by the Agricultural Adjustment Administration, may be of considerable value in working out a solution of this problem.

Lack of Uniformity in State Regulation of Motor Trucks

One of the obstacles to efficient operation of motor trucks, which results in great confusion, is the remarkable variation in laws governing operations of motor trucks in each State and between States. What one State approves as standard safety and emergency equipment may not be approved at all by another State. Maximum permissible widths, heights, and lengths of trucks vary widely, as do speed limits, gross permissible weights of loaded trucks or trailers, safety equipment, taxes, maximum hours of labor, and other items.

Efficient operation of commercial truckers as well as private operators often depends on "following the season" across State lines. Consequently, truck operators are often called upon to comply with two or more sets of complex regulations. It is relatively difficult for truck operators to become familiar with all of the provisions of the laws of the various States in which they operate. If commercial, as well as private truck owners, are to operate most efficiently

at lowest costs, it would seem imperative that some unification of motor-truck regulations between States be worked out at an early date. At present, some States as well as local regulations are distinct barriers to interstate commerce. 3/

Effect of Motor Carrier Act of 1935

Among the motor vehicles exempted from most of the provisions of the Motor Carrier Act of 1935 are "(4a) motor vehicles controlled and operated by any farmer and used in the transportation of his agricultural commodities and products thereof, or in the transportation of supplies to his farm; or (4b) motor vehicles controlled and operated by a cooperative association as defined in the Agricultural Marketing Act, approved June 15, 1929, as amended; * * * or (6) motor vehicles used exclusively in carrying livestock, fish (including shell fish), or agricultural commodities (not including manufactured products thereof) * * *." 4/

Groups of growers, as well as managers of cooperative associations, may find it profitable to make comparative analyses of the rates, speed, and quality of service offered by competitive transportation agencies in their respective localities, in order to adopt the most economical and satisfactory methods of shipping their commodities.

In determining the type of transportation to be used, cooperative associations and groups of growers or shippers may well give consideration also to the question of operating their own trucks. 5/

3/ For further discussion of these matters see National Highway Users' Conference, State Restrictions on Motor Vehicle Sizes and Weights, 119 pp., illus., Washington, D. C. 1935, (mimeographed) (Highway User Series No. L 1); Registration Fees and Special Taxes for Motor Vehicles, 216 pp., 1936 (Highway User Series No. L 2); and Equipment Requirements for Motor Vehicles, 127 pp., 1936 (Highway User Series No. L 3).

4/ Section 203, subsection (b) of the Motor Carrier Act of 1935.

5/ The experience of the Mushroom Growers Cooperative Association of Pennsylvania, at Kennett Square, offers an example of what one organization has accomplished in this respect.

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U.S. Farm credit adm. Coop. div.
Misc. report. Dec. 1936.
Use of motor trucks

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